APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,317	04/19/2004	Tony Larsson	0119-176	1069

42015   7590   06/11/2009
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EXAMINER
REDDIVALAM, SRINIVASA R

ART UNIT	PAPER NUMBER
2419	

NOTIFICATION DATE	DELIVERY MODE
06/11/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

tammy@ppglaw.com

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
	10/826,317	LARSSON ET AL.
Office Action Summary	Examiner	Art Unit	
	SRINIVASA R. REDDIVALAM	2419	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>04 March 2009</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-4 and 9-19</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-4, and 9-19</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All b) ☐ Some * c) ☐ None of:

         1. ☐ Certified copies of the priority documents have been received.

         2. ☐ Certified copies of the priority documents have been received in Application No. _____.

         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

2.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

3.   Claims 1-4, and 9-19 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Cansever (US Patent No: 6,678,252 B1) in view of Morris et al. (US pub. No:

2003/0149794 A1).

        Regarding claim 1, Cansever teaches in an ad-hoc network wherein data

packets are sent from a source node to a destination node via an established route, a

source node (see node i in Fig.5) comprising: means (see Transmitter/Transceiver

block 512 in node i in Fig.5) for requesting route discovery between the source node

and a destination node over existing subnetworks (see col.7, lines 13-20 wherein

generation of a route request packet from a source node to destination node to initially
identify a path from source to destination in MANETs is mentioned); means for
determining (see Receiver/ Transceiver block 512 in node i in Fig.5) whether said
request for route discovery between the source node and the destination node over
existing subnetworks fails (see col.7, lines 36-38 wherein source node not receiving a
reply packet within a specified period of time is mentioned); and means (see Processor
block 504 in node i in Fig.5) for determining a route between the source node and the
destination node by forming and/or reforming one or more new connections in response
to determining that said request for route discovery between the source node and the
destination node over existing subnetworks fails (see col.7, lines 59-61 wherein
establishment of a new path is mentioned when the existing path becomes unusable
due to node mobility, etc.).

Cansever teaches the source node comprising means for determining a route
between the source node and the destination node by forming and/or reforming one or
more new connections in response to determining that said request for route discovery
between the source node and the destination node over existing subnetworks fails as
mentioned above and **does not teach specifically** the means for determining a route
between the source node and the destination node by **forming and/or reforming one
or more subnetworks** in response to determining that said request for route discovery
between the source node and the destination node over existing subnetworks fails.

However, Morris et al. teach the source node comprising means for determining

a route between the source node and the destination node by forming and/or reforming

one or more **subnetworks** in response to determining that said request for route

discovery between the source node and the destination node over existing subnetworks

fails (see page 4, para [0029] wherein the wireless node issuing

message/advertisement to initiate **establishment of a piconet** is mentioned).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time of invention to modify the source node of Cansever to have the source node

comprising means for determining a route between the source node and the destination

node by forming and/or reforming one or more **subnetworks** in response to determining

that said request for route discovery between the source node and the destination node

over existing subnetworks fails, disclosed by Morris et al. for more efficient routing and

higher throughput of data packets in ad-hoc mobile network.

Regarding claim 2, Cansever further teaches the source node wherein said

means for requesting route discovery comprises: means for broadcasting a route

discovery request message, for a route between the source node and the destination

node over one or more existing subnetworks, if the source node is a member of one or

more of the existing subnetworks (see col.7, lines 21-33 wherein broadcasting of a route

request packet from source node to destination node over an existing connection in a
subnetwork is mentioned).

Regarding claim 3, Cansever further teaches the source node wherein said
means for determining whether said request for route discovery between the source
node and the destination node over existing subnetworks fails comprises: means for
determining if a timely reply message is received by the source node in response to the
broadcast route discovery request message (see col.7, lines 36-38 wherein the source
node not receiving a reply packet within a specified period of time and re-issuing the
route request packet are mentioned).

Regarding claim 4, Cansever does not teach specifically the source node,
wherein said means for determining a route comprises: means for establishing a route
between the source node and the destination node over one or more newly formed
and/or reformed subnetworks in response to determining that a timely reply was not
received.

However, Morris et al. teaches the source node comprising means for
establishing a route between the source node and the destination node over one or
more newly formed and/or reformed subnetworks in response to determining that a
timely reply was not received (see page 4, para [0029] wherein the wireless node
issuing message/advertisement to initiate establishment of a piconet is mentioned).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the source node of Cansever to have the source node comprising means for establishing a route between the source node and the destination node over one or more newly formed and/or reformed subnetworks in response to determining that a timely reply was not received, disclosed by Morris et al. for more efficient routing and higher throughput of data packets in ad-hoc mobile network.

Regarding claim 9, Cansever teaches in an ad-hoc network, an arrangement for establishing a route over which data packets are to be sent from a source node to a destination node, the arrangement (see Figures 2 and 3) comprising: a source node (see node i in Fig.5); and at least one destination node (node j=4 in Fig.2), wherein the source node (see node i in Fig.5) comprises: means (see Transmitter/Transceiver block 512 in node i in Fig.5) for requesting route discovery between the source node and the destination node over existing subnetworks (see col.7, lines 13-20 wherein generation of a route request packet from a source node to destination node to initially identify a path from source to destination in MANETs is mentioned); means (see Receiver/ Transceiver block 512 in node i in Fig.5) for determining whether said request for route discovery between the source node and the destination node over existing subnetworks fails (see col.7, lines 36-38 wherein source node not receiving a reply packet within a specified period of time is mentioned); and means (see Processor block 504 in node i in Fig.5) for establishing a route between the source node and the destination node by forming and/or reforming one or more new network connections in response to determining that said request for route discovery between the source node and the

destination node over existing subnetworks failed (see col.7, lines 59-61 wherein establishment of a new path is mentioned when the existing path becomes unusable).

Cansever **teaches** the source node comprising means for establishing a route between the source node and the destination node by forming one or more new connections in response to determining that said request for route discovery between the source node and the destination node over existing subnetworks failed as mentioned above and **does not teach specifically** the means for establishing a route between the source node and the destination node by **forming and/or reforming** one or more **subnetworks** in response to determining that said request for route discovery between the source node and the destination node over existing subnetworks failed.

However, Morris et al. teaches the source node comprising means for establishing a route between the source node and the destination node by forming and/or reforming one or more subnetworks in response to determining that said request for route discovery between the source node and the destination node over existing subnetworks failed (see page 4, para [0029] wherein the wireless node issuing message/advertisement to initiate **establishment of a piconet** is mentioned).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the arrangement of Cansever to have the source node comprising means for establishing a route between the source node and the destination node by forming and/or reforming one or more subnetworks in response to determining

that said request for route discovery between the source node and the destination node
over existing subnetworks failed, disclosed by Morris et al. for more efficient routing and
higher throughput of data packets in ad-hoc mobile network.

Regarding claim 10, Cansever further teaches the arrangement, wherein the
means for determining whether said request for route discovery between the source
node and the destination node over existing subnetworks failed comprises: means for
determining whether the source node received a timely reply in response to the request
for route discovery (see col.7, lines 36-38 wherein the source node not receiving a reply
packet within a specified period of time and re-issuing the route request packet are
mentioned).

Regarding claim 11, Cansever and Morris et al. together teach the arrangement
of claim 9.

Morris et al. further teach the arrangement wherein the network is a Bluetooth
technology based network (see page 2, para [0015]).

Regarding claim 12, Cansever teaches in an ad-hoc network, an arrangement
for establishing a route between a source node and a destination node over which data
packets are to be sent, the arrangement (see Figures 2 and 3) comprising: a plurality of
nodes that communicate with each other over one or more subnetworks (see Fig.2); a
source node (see node i in Fig.5) ; and a destination node (see node j=4 in Fig.2),
wherein the source node (see node i in Fig.5) comprises: means (see

Transmitter/Transceiver block 512 in node i in Fig.5) for broadcasting a route discovery

request message for a route between the source node and the destination node over

one or more existing subnetworks if the source node is a member of one or more of the

existing subnetworks (see col.7, lines 13-33 wherein generation of a route request

packet from a source node to destination node to initially identify a path from source to

destination in MANETs is mentioned) ; means (see Receiver/ Transceiver block 512 in

node i in Fig.5) for determining if a timely reply message is received by the source node

in response to the broadcast route discovery request message (see col.7, lines 36-38

wherein the source node not receiving a reply packet within a specified period of time

and re-issuing the route request packet are mentioned) and means (see Processor

block 504 in node i in Fig.5) for establishing a route between the source node and the

destination node by forming one or more new connections in response to determining

that a timely reply message was not received (see col.7, lines 59-61 wherein

establishment of a new path is mentioned when the existing path becomes unusable).

Cansever **teaches** the source node comprising means for establishing a route

between the source node and the destination node by forming one or more new

connections in response to determining that a timely reply message was not received as

mentioned above and **does not teach specifically** the source node comprising means

for establishing a route between the source node and the destination node by **forming**

and/or reforming one or more **subnetworks** in response to determining that a timely

reply message was not received.

However, Morris et al. teaches the source node comprising means for establishing a route between the source node and the destination node by forming and/or reforming one or more subnetworks in response to determining that a timely reply message was not received (see page 4, para [0029] wherein the wireless node issuing message/advertisement to initiate **establishment of a piconet** is mentioned).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the source node of arrangement of Cansever to have the source node comprising means for establishing a route between the source node and the destination node by forming and/or reforming one or more subnetworks in response to determining that a timely reply was not received, disclosed by Morris et al. for more efficient routing and higher throughput of data packets in ad-hoc mobile network.

Regarding claim 13, Morris et al. further teaches the source node of the arrangement further comprises: means for establishing a route between the source node and the destination node by forming and/or reforming one or more subnetworks in response to determining that the source node is not a member of one or more of the existing subnetworks (see Fig.4 & page 5, paragraphs [0053] & [0054] wherein mobility of source node/slave node among piconets i.e. from 1st piconet to 2nd piconet is mentioned and also see para [0052]).

Regarding claim 14, Morris et al. further teaches the source node of the arrangement further comprises means for establishing a route between the source node

and the destination node by forming and/or reforming one or more subnetworks in response to determining that the destination node is not a member of one or more of the existing subnetworks (see Fig.4 & page 5, paragraphs [0053] & [0054] wherein mobility of destination node/slave node among piconets i.e. from 1st piconet to 2nd piconet is mentioned).

Regarding claim 15, Morris et al. further teaches the source node of the arrangement further comprises: means for determining whether a route that includes one or more newly formed and/or newly reformed subnetworks is desirable, in response to determining that a timely reply in response to the route discovery request message is received by the source node (see Fig.3, and page 4, para [0029]).

Regarding claim 16, Morris et al. further teaches the source node of the arrangement further comprises: means for establishing a route between the source node and the destination node over one or more existing subnetworks if it is determined that a timely reply in response to the route discovery request message is received and it is determined that a route that includes one or more newly formed and/or newly reformed subnetworks is not desirable (see Fig.3, and page 4, paragraphs [0029] & [0030]).

Regarding claim 17, Cansever teaches the source node of the arrangement further comprises: means for establishing a route between the source node and the destination node over the one or more existing subnetworks if it is determined that a timely reply in response to the route discovery request message is received (see col.7, lines 17-36 wherein broadcasting of a route request packet and identifying a path from

source node to destination node over an existing connection in a subnetwork is
mentioned).

Cansever does not teach specifically the source node of the arrangement further
comprises: determining that a route that includes one or more newly formed and/or
newly reformed subnetworks is desirable, and for simultaneously initiating route
discovery for a route between the source node and the destination node that includes
one or more newly formed and/or reformed subnetworks.

However, Morris et al. teach the source node of the arrangement further
comprises: determining that a route that includes one or more newly formed and/or
newly reformed subnetworks is desirable, and for simultaneously initiating route
discovery for a route between the source node and the destination node that includes
one or more newly formed and/or reformed subnetworks (see Fig.3, and page 4, para
[0029]).

Therefore, it would have been obvious to one of ordinary skill in the art at the
time of invention to modify the source node of arrangement of Cansever to have
determining that a route that includes one or more newly formed and/or newly reformed
subnetworks is desirable, and for simultaneously initiating route discovery for a route
between the source node and the destination node that includes one or more newly

formed and/or reformed subnetworks, disclosed by Morris et al. for more efficient

routing and higher throughput of data packets in ad-hoc mobile network.

Regarding claims 18 and 19, Morris et al. further teach the arrangement

wherein ad-hoc network is a Bluetooth technology based network and the existing and

newly formed and/or reformed subnetworks are piconets (see page 2, para [0015]).

Response to Arguments

4.   Applicant's arguments filed on 03/04/2009 have been fully considered but they

are not persuasive.

5.   In pages 3-4 of Applicant's Remarks, regarding independent claims 1, 9 and 12,

Applicant mentions that Morris' text is not concerned with determining a route between a

source node and a destination node in an existing network, and therefore does not

teach sending a request for route discovery between a source node and a destination

node over existing subnetworks. Without this, there is no concept in Morris of detecting

whether any such route discovery attempt fails, and in response to such failure forming

and/or reforming one or more subnetworks. **However, Examiner respectfully**

disagrees to these Applicant's statements. See page 4, para [0029] wherein

Morris clearly teaches that a wireless node (i.e. a source node) initially listens for

the presence of advertisements from other wireless nodes (i.e. destination nodes)

in the existing piconet is mentioned which is equivalent to requesting for route

discovery between the source node and the destination node over the existing

network, and also is mentioned that if the wireless nodes does not detect the

advertisement (see Fig.3, block 178), then wireless node issues initial

advertisement to establish new piconet (see Fig.3, block 180) which is equivalent

to determining a route between the source node and the destination node by

forming and/or reforming one or more subnetworks in response to determining

that said request for route discovery between the source node and the

destination node over existing subnetworks fails.

Cansever teaches in an ad-hoc network wherein data packets are sent from a

source node to a destination node via an established route, a source node (see node i

in Fig.5) comprising: means (see Transmitter/Transceiver block 512 in node i in Fig.5)

for requesting route discovery between the source node and a destination node over

existing subnetworks (see col.7, lines 13-20 wherein generation of a route request

packet from a source node to destination node to initially identify a path from source to

destination in MANETs is mentioned); means for determining (see Receiver/

Transceiver block 512 in node i in Fig.5) whether said request for route discovery

between the source node and the destination node over existing subnetworks fails (see

col.7, lines 36-38 wherein source node not receiving a reply packet within a specified

period of time is mentioned); and means (see Processor block 504 in node i in Fig.5) for

determining a route between the source node and the destination node by forming

and/or reforming one or more new connections in response to determining that said

request for route discovery between the source node and the destination node over

existing subnetworks fails (see col.7, lines 59-61 wherein establishment of a new path is

mentioned when the existing path becomes unusable due to node mobility, etc.).

Thus Cansever in combination with Morris teach all the limitations of claim 1.

6.   The rejection of all other claims is already mentioned above under Claim

Rejections.

Conclusion

7.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

8.   Any response to this office action should be faxed to (571) 273-8300 or mailed

To:

                Commissioner for Patents,
                P.O. Box 1450

Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window

Randolph Building

401 Dulany Street

Alexandria, VA 22314.

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to SRINIVASA R. REDDIVALAM whose telephone number is (571)270-3524. The examiner can normally be reached on Mon-Fri 9:30 AM - 7 PM (1st Friday OFF).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chirag Shah can be reached on 571-272-3144. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Srini Reddivalam

06/06/2009

/Chirag G Shah/

Supervisory Patent Examiner, Art Unit 2419